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# *IS BACK TO NATURE ALWAYS BEST?*

BETH SULZER-AZAROFF
UNIVERSITY OF MASSACHUSETTS, AMHERST

Comunidad Los Horcones mounts a compelling argument for the use of natural reinforcement in the schools, offering the strategy as a way to improve education. No person concerned with educational effectiveness can take issue with the notion that the most enjoyable and enduring learning is that which is an "automatic product of," that is, reinforced by its function (i.e., the "natural reinforcer" as defined in the Los Horcones paper). Natural or functional reinforcers, the stimulus events produced by the instrumental (learning) responses, are integral to the behavior, follow it everywhere, and support its continued maintenance. They require no time from educators, nor can society, educators, parents, or students take issue with their use on philosophical or ethical grounds. Indeed, natural reinforcement is best and the way to go, provided (a) that the learning objective *does* produce a natural reinforcer and (b) that the natural reinforcer *is more powerful* than any competing punishers inherent in the task or reinforcers for competing responses. Let us examine each of these provisos separately.

Do all learning tasks automatically produce reinforcers? Often, but not always. Many function to enable more advanced or complex objectives, frequently set a long time into the future. Learning to discriminate a *b* from a *d* contributes toward the student's ultimate skill as a reader, but in and of itself provides little in the way of natural reinforcement. Learning a definition of a concept such as "negative reinforcement" is essential to understanding, talking about, experimenting with, and so on, the behavior of organisms, but acquiring the verbal chain accomplishes little for the person (other than the limited reinforcement some find inherent in meeting a challenge). Were it not for the fact that someone in the verbal community indicated the eventual payoff, the incentive to strive to master those skills would be limited indeed.

Some learning activities are inherently punishing, because they require extraordinary effort, time, or other resources. We encounter that sort of problem frequently in our occupational safety research. Workers fail to take sensible precautions because the extra time, effort, or discomfort required (e.g., wearing a hard hat or safety glasses) is punishing, whereas the functional reinforcers (avoiding an injury) are minimally detectable and are delayed and intermittent. Were no supplementary reinforcers instituted, compliance with good safety practices would be (and is) minimal. Similar contingencies exist in many aspects of educational tasks. Initially attempting to copy letters can be punishing to young children because, despite how hard they have tried, they realize the product they have created hardly resembles the model at all. Difficult math problems pose similar difficulties for many, as do numerous other "enabling" academic skills. Other learning activities do produce natural reinforcers, but they may be insufficiently powerful to compete with the more beguiling reinforcers for engaging in competing behaviors. Laboriously writing an essay that the student later can read and admire may not adequately compete with the reinforcers delivered by peers for clowning around or for working on a favored crafts project instead.

Effective teachers recognize those distinctions. They coach minimally and offer little in the way of extrinsic reinforcement when they know the students will enjoy the fruits of their accomplishments. Other than their own natural reactions of pleasure, those teachers hardly would offer highly contrived rewards to students enjoying a birthday celebration, playing their preferred games, or singing their favorite song. Certainly by the time a student learns the pleasure of reading a story for entertainment, the accomplishment is its own reinforcer.

Reprints may be obtained from the author, Department of Psychology, University of Massachusetts, Amherst, Massachusetts 01003.

Successful teachers also "intuitively" supplement with social reinforcers when essential, to overcome insufficient natural reinforcement or intrinsic punishment. For instance, they might comment positively and enthusiastically on efforts and *label* the quality and value of the effort. "Good for you, Carlos; now when you see the words 'dad' and 'bad,' you'll be able to tell the difference." Exposing students to lots of good teaching practices like those, in which mastery of skills is paired with positive social events, should help make academic achievement reinforcing for students. That appears to be the main thrust of the Los Horcones paper, and this reviewer couldn't agree more. (Indeed Roy Mayer and I have tried to convey that message in *Achieving Educational Excellence* and have emphasized it even more heavily in the chapters on reinforcement and on maintenance in our 1991 text, *Behavior Analysis for Lasting Change.*)

The problem, at least in U.S. society, is that meeting educational challenges never becomes reinforcing to many students. Nor does earning the teacher's praise, participating in learning activities, or even attending school. Drop-out and truancy rates are enormous, achievement of even the most basic skills marginal. The contemporary educational battle in many segments of this society is not to strive for the ideal, but to attempt to stem the complete erosion of any form of effective education.

Why we are faced with this sorry stage of affairs is anyone's guess, but probably numerous factors are at work: poverty and its attendant abuse at home; poorly trained and managed teachers; competition from more enticing or readily obtained reinforcers such as television, peer approval, sex, addictive substances, and so on. Various studies, for instance, have shown that in this country, far from delivering positive consequences (natural or artificial) for accomplishments, many teachers punish lack of accomplishment and poor deportment in proportions far greater than any positive reinforcement they deliver. Even the best trained and most optimally performing teachers, confronted with the world's realities (outside of utopian societies like Los Horcones) find such obstacles produced by those histories difficult to overcome.

Much as we might resist the notion, I believe we have to begin not with what *should be* but with what *is*. In terms of educational accomplishments per se, if their natural consequences are insufficient or punishing, we have to supplement those consequences with more powerful, positive stimuli. A reinforcer is a reinforcer only if it increases or maintains the behavior it follows. This means that sometimes students and teachers need to resort to consequences of the more contrived type. Of course, should the natural community of reinforcers begin to establish itself, weaning the learner from the artificial ones would be feasible. If the inherent function of the task is insufficiently reinforcing or even is punishing, some supplements probably need to be continued indefinitely. Wearing a hard hat never will become enjoyable, and the likelihood of avoiding injury when an object falls on one's protected skull is so minimal that even the naturally inherent negative reinforcement is on an extremely thin schedule. Unless they have had extremely talented teachers, many students will never derive pleasure from performing the early steps of a complicated mathematical operation. If students' histories have taught them that school is a punishing place, their histories must be overcome by supplying an environment enriched with reinforcers of all sorts, so that attending school, participating, complying with rules of conduct, and learning are all reinforcing de facto.

Los Horcones contends that natural reinforcers are sufficient to promote educational success among its students. Undoubtedly they have the data to support their contention. These should be analyzed and published because experimentally documented evidence of the effectiveness of natural reinforcers is just the sort of thing the behavior-analytic and educational communities need.

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